CLAIMS

1. A method of coating the surface of substrates, characterized in that a solution of a polymer having derivatized hydroxyl and/or carboxyl groups and/or CN, halogen, and/or amino substituents is brought into contact with the surface of the substrate and said derivatized hydroxyl and/or carboxyl groups or CN, halogen and/or amino substituents are solvolyzed so that the polymer is converted to a form showing reduced solubility.

2. A method as defined in claim 1, characterized in that solvolysis is carried out only partially.

3. A method as defined in claim 1 or claim 2, characterized in that the polymer has unsaturated groups in side chains and/or the backbone chain.

4. A method as defined in any one of claims 1 to 3, characterized in that the polymer exhibits active groups and/or forms the same during solvolysis, which groups serve to immobilize the polymer.

5. A method as defined in any one of claims 1 to 3, characterized in that after the surface of the substrate has been coated with the polymer, immobilization is effected by means of a crosslinking reaction following the solvolysis.

6. A method as defined in claim 5, characterized in that the crosslinking reaction is a free-radical reaction or an addition or condensation reaction.

7. A method as defined in any one of claims 4 to 6, characterized in that the surface of the substrate is washed following immobilization of the polymer.

8. A method as defined in any one of claims 1 to 7, characterized in that the substrate is a particulate substrate and that the polymer has a molar mass of from 1,000 to 50,000 g/mol.

9. A method as defined in any one of claims 1 to 7, characterized in that the substrate is a flat substrate and that the polymer has a molar mass of from 1,000 to 500,000 g/mol.

10. A method as defined in claim 8, characterized in that the particulate substrate is selected from the group comprising pigments, fillers, fibers, nano particles, and particles of colloidal or micellar systems.

11. A method as defined in any one of claims 1 to 10, characterized in that the surface of the substrate is coated with a nano layer of a polymer.

12. A substrate having a polymer-coated surface, produced by a method as defined in any one of claims 1 to 11.

13. A substrate as defined in claim 12, characterized in that the coating is a nano layer.

14. A substrate as defined in claim 12 or claim 13, characterized in that the substrate is a metallic substrate.

15. A substrate as defined in claim 14, characterized in that the substrate is made of steel, galvanized steel, aluminum, or an aluminum alloy.

16. A substrate as defined in any one of claims 12 to 15, characterized in that the substrate is a particulate substrate, selected from the group comprising pigments, fillers, fibers or lamellar particles, nano particles, and particles of colloidal or micellar systems.